Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_

291 Ch 7 Test Review

For #s 1 & 2, answer the following questions:

a. Is the function odd or even?

b. Describe the end behavior.

c. State the number of real zeros.



**#1**

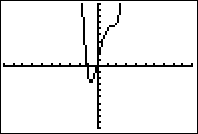
1. a.\_\_\_\_\_\_\_\_\_\_\_\_

b. As , then \_\_\_\_\_\_\_\_

As , then \_\_\_\_\_\_\_\_

c.\_\_\_\_\_\_\_\_\_\_\_\_\_

**#2**

2. a.\_\_\_\_\_\_\_\_\_\_\_\_

b. As , then \_\_\_\_\_\_\_\_

As , then \_\_\_\_\_\_\_\_

c.\_\_\_\_\_\_\_\_\_\_\_\_\_

For #s 3 and 4, calculate the real zeros and the relative max and min.

3. y = x3 – 6x – 9 Zeros\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Max\_\_\_\_\_\_\_\_\_\_\_\_\_ Min\_\_\_\_\_\_\_\_\_\_\_\_

4. y = x4 – 3x3 + 7x + 1 Zeros\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Max\_\_\_\_\_\_\_\_\_\_\_\_\_ Min\_\_\_\_\_\_\_\_\_\_\_\_

Solve using quadratic techniques.

5. x3 – 8 = 0 6.

7. What would be the degree of an equation with the following roots?\_\_\_\_\_\_\_\_\_\_\_\_

2, 4,

8. Write the equation.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

List all of the possible rational roots for the following equations, then solve completely.

9. f(x) = x4 + 5x3 + 15x2 + 19x + 8 10. f(x) = 2x4 – 9x3 + 2x2 +21x – 10

Given: f(x) = x3 and g(x) = x – 2 and h(x) = 2x3 + 4x - 8

11. Find (x). 12. Find (x).

Given: f(x) = x3 and g(x) = x – 2 and h(x) = 2x3 + 4x - 8

13. Find (f + h)(x). 14. Find (h – g)(x).

16. Find (f x h)(x).

Given f = {(1,2) (3, 4) (5, 6) (7, 8)} g = {(3, 5) (7, 4) (6, 2) (8, 1)}

17. Find . 18. Find .

Find the inverse of the following.

19. f(x) = ½ x + 6 20. f(x) =

21. Use composition of functions to show that f(x) and f-1(x) from #19 are in fact inverses.

Sketch the inverse of the following.

22. y = x2 – 5 23. y = x3 + 2



Graph the following. Use a table of values.

24. 25.



Sketch the graph of the following polynomials (use the maximum number of turning points).

26. An odd function with a degree of 5, a negative leading coefficient, and 2 imaginary roots

27. An even function with a degree of 6, 4 imaginary roots, and a positive leading coefficient